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October 19, 2006

Greetings Mr. Giattina,

Tennessee Clean Water Network along with several other non-profit groups concerned with water quality issues would like to express concerns with the proposed Tennessee Department of Environment and Conservation's (TDEC) interpretation of the Clean Water Act. We have concerns about mixing zones, the definition of *de minimis*, narrative criteria replacing numeric criteria for iron, a lack of numeric criteria for nutrients, and several other topics that are addressed in the attached document. We would like to highlight, however, the concerns regarding the interpretation of the antidegradation section of the standards.

As you may know, it is unclear exactly how TDEC's antidegradation classification system is intended to correspond to the three tiers of protection required by 40 CFR 131.12. Greg Denton stated in his presentation to the Water Quality Control Board with EPA employees present that TDEC is categorizing waters that are considered Tier II by the Clean Water Act (meeting or better than water quality standards require) as "available water." However, the proposed language for this protection category does not appear to require a public showing that the lowering of water quality is "necessary" to achieve important social and economic development as required by 40 CFR § 131.12.

The alternatives analysis does require a consideration of the "social and economic considerations" and "environmental consequences" of each considered alternative, but it does not require an analysis of the economic and social implications of the project itself. (For example, compare the test for Exceptional Tennessee Waters, which explicitly requires that any change in water quality be "justified as a result of necessary economic or social development." (*see* 1200-4-3-.06(4)(h) and (i)). Moreover, we are troubled by the fact that because much of the rules and procedures specified in the rules for "Exceptional" waters are the minimum necessary to satisfy Tier II requirements under 40 CFR 131.12(a)(2), an implication may arise that "available water" may be degraded without meeting minimum Tier II requirements.

Any downgrading of protection for Tier II waters is not consistent with federal law and would encourage EPA to request that the Exceptional Tennessee Waters antidegradation process be revisited to apply to all Tier II waters including "available waters." At a minimum, EPA sure assure that TDEC will give all of the Tier II protections to "available waters" including a demonstration that degradation of such "available waters" is necessary to accommodate important economic or social development and that such showing in made in a manner that allows full public participation in the process.

Please place this letter and the attached comments in the record for EPA's consideration under Section 303(c) of the Clean Water Act of the proposed Tennessee standards proposes.

Regards,

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Director of Policy and Legislative Affairs

CC: Gregroy Denton
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September 22, 2006

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Dear Greg,

Thank you for the opportunity to review and comment on the Department's proposed Water Quality Criteria Revisions. Although we support many of the proposed changes, the latest draft raises several questions and concerns that must be resolved in advance of any formal rulemaking action in order to avoid any misunderstanding and further delays in enhancing the protections for Tennessee's waters.

We have outlined some of our questions and concerns below. Some of them are relatively minor and can likely be resolved immediately. Others concern major issues that require changes in the proposal to comply with the Clean Water Act and properly protect Tennessee rivers, lakes and streams. The Department should provide written responses for the record to be clear for U.S. EPA and for further application of the new and revised criteria.

1) Table of Contents (p. 2)

The Table of Contents omits Rule 1200-4-3-.05 "Interpretation of Criteria." This omission appears to be a simple oversight, but should be corrected before the rules are submitted.

2) 1200-4-3.02(3) – Discussion of assimilative capacity (p.2)

A clear definition and understanding of the term "assimilative capacity" is critical to a well-functioning antidegradation policy. The purpose of the Tier II antidegradation policy, which appears at 40 CFR 131.12(a)(2) is to assure that assimilative capacity is not sacrificed unless it has been shown that it is "necessary to accommodate important economic or social development in the area in which the waters are located." The law is clear that the rules cannot allow a significant loss of assimilative capacity either from a single permitting decision or from the cumulative effect of a number of permitting decisions. Ohio Valley Environmental Coalition v. Horinko, 279 F.Supp. 2d 732 (D. W. Va. 2003)

In this section, the Department notes that the "assimilative capacity of a stream … varies depending upon various factors" such as "volume of flow, depth of channel, the presence of falls or rapids, rate of flow, temperature, natural characteristics, and the nature of the stream."

Although we agree that a stream's assimilative capacity may vary depending on "various factors," this section and Chapter 1200-4-3 in general do not provide any guidance as to how the Department will take these factors into account to calculate the actual assimilative capacity of a stream that will be used to make decisions under Tennessee's antidegradation policy. It is especially important to have a clear understanding of how the Department intends to calculate assimilative capacity given that section 1200-4-3-.04 defines *de minimis* discharges in terms of a percentage of assimilative capacity, which would allow certain discharges to escape the antidegradation review required for available waters.

It needs to be made clear that assimilative capacity must be stated in terms of consistent units – such as using daily maximum permit limits with acute criteria for those parameters with such (most metals, bacteria, DO, etc.), especially where there are TMDLs (Total *Maximum Daily* Loads) involved. If any units of time or measurement other than daily maximum/minimum are to be used for assimilative capacity determinations, they should be clearly explained and consistent within the assimilative capacity determination to avoid apple and orange comparisons.

Also, of particular importance is how assimilative capacity will be calculated with respect to parameters for which numeric criteria have not yet been established, such as phosphorus and nitrogen. Nutrient pollution is a major issue across Tennessee and algal blooms and other adverse affects of nutrient pollution can harm drinking water supplies, aquatic life and recreational uses of water bodies across the country (see U.S. Environmental Protection Agency, Nutrient Criteria, Technical Guidance Manual, Rivers and Streams, EPA -822-B-00-002 (July 2000)). The rules must not allow unnecessary loss of a significant amount of assimilative capacity for phosphorus or nitrogen and Tennessee if it is to allow any new or increased discharge of those pollutants as de minimis, should be prepared to demonstrate that that the discharge will not consume more than a de minimis amount of the assimilation capacity of its narrative standards.

The Department should provide additional detail and examples of how it intends to calculate the assimilative capacity of a stream in response to a proposed new or expanded discharge both for parameters that have numeric criteria as well as parameters for which only narrative water quality standards exist.

3) 1200-4-3-.02(9) -- Site-specific criteria studies (p. 3)

This section allows site-specific criteria studies based on a Water Effects Ratio (WER) to supersede the adopted criteria on a case-by-case basis. Although in theory this is an acceptable approach if it carefully follows U.S. EPA guidance, we are concerned that this procedure is most often used in Tennessee as a technique to weaken standards.

The Department should provide more detail on how it intends to solicit and evaluate these studies to ensure that the use of WER results in balanced overall protection for all Tennessee waters.

4) 1200-4-3-.03(3)(d) -- Turbidity standard (p. 7)

The draft rules provide only a narrative standard for turbidity, total suspended solids, and color under both the Fish & Aquatic Life and Recreation designated uses. We continue to believe that a numeric standard for at least turbidity is necessary and that this standard should be based on the differential from the natural background, if not as an independent value. We raised this issue in earlier comments, but the Department's responses are confusing and appear to be somewhat inconsistent (see Response to Comments D-8, G-5, G-6, H-1, H-4). For example, the Department alternatively states that it "needs a process for interpreting narrative criteria" (D-8), that narrative criteria for habitat are the "best tool" for diagnosing stream impairment due to excessive silt (G-5), and that the Department "would prefer" a numeric color criterion (H-4). These remarks do not adequately explain why the Department decided not to select a numeric criterion for turbidity, and in fact have resulted in additional confusion. Further explanation is needed to clarify this issue.

The Department referred to how criteria are done for other states in this EPA region in justifying weakening the DO criteria. If consistency with other states is to be any guide, it should also be considered in terms of mud. Numerous other states have established numeric turbidity criteria with no adverse consequences, and Tennessee could easily do the same – without having to re-invent any wheels. At least three other states in Region 4 – Alabama, Florida, and North Carolina – have numeric turbidity criteria, and our state should not lag behind on this important parameter, especially because it measures what is often cited as our greatest water pollution problem.

Accordingly, the Department should clarify its position on the use of a numeric standard for turbidity and should immediately begin developing such a standard. We would welcome the opportunity to work with the Department on this issue.

5) 1200-4-3-.03(3)(i) – Iron standard (p. 10)

The latest revision switched the criterion for Iron from a numeric to a narrative standard. The Responsiveness Survey does not explain or justify this action (see response to comment G-15). We believe that as a practical matter that this change renders the criteria unenforceable and will harm water quality.

We urge the Department to explain why the former numeric approach was rejected and to provide the scientific basis to support this change, especially given the difficulties of applying and enforcing narrative standards.

6) 1200-4-3-.03(3)(j) – Ammonia standard (p. 10)

We believe that these criteria are designed to track the 1999 U.S. EPA ammonia criteria. Unfortunately, studies by the U.S. Fish and Wildlife Service indicate that the EPA ammonia criteria (1999) are not protective of endangered mussel populations which exist in Tennessee rivers and streams. This problem is discussed in several studies cited at www.epa.gov/waterscience/criteria/ammonia and other studies including Ammonia Aquatic Life

Criteria Re-Evaluation. Available at http://www.epa.gov/waterscience/criteria/ammonia/ Accessed: August 31, 2006.

The Department should look carefully at the most recent data and adopt standards that are protective of Tennessee's endangered mussels

7) 1200-4-3-.03(4)(i) – Nutrient response criteria (p. 12)

The latest draft drops the nutrient response criterion for Guntersville Reservoir. This change is not justified by the Responsiveness Survey. Response to comment H-13 notes that the nutrient response criterion for Guntersville was intended to match Alabama's existing chlorophyll *a* criterion "so that the entire reservoir would have the same clean water goal." While this approach is quite reasonable, it appears as if the criterion was abandoned because someone asked a question about the "legal basis" for the decision. The legal basis for the approach is that it is needed to protect the reservoir and is justified by the science that has been developed by the Department and the state of Alabama.

The Department should readopt its original chlorophyll *a* criterion for Guntersville Reservoir and defend its reasonable approach, rather than simply deleting the proposal.

8) 1200-4-3-.03(4)(j) – Toxics standard for Fish & Aquatic Life (p. 12)

Tennessee has adopted a narrative standard for toxics. The Department should make clear how it intends to translate this narrative standard into permit limits and judgments for the 303(d) list regarding impaired waters. In particular, the Department should clarify whether it intends to use Whole Effluent Toxicity (WET) testing to determine the proper limits under the narrative standards or some other method to adequately ensure the protection of aquatic life.

9) 1200-4-3-.03(4)(j) – Toxics standards for human health (pp. 13, 15)

The table indicates that the standards for 1,1-Dichloroethylene have increased substantially from 0.57 to 330 ug/L (water & organisms) and 32 to 7100 ug/L (organisms only) and that the standards for Lindane have increased from 0.19 to .98 ug/L (water & organisms) and .63 to 1.8 ug/L (organisms only). The basis for these revisions is not clear.

We urge the Department to either maintain the current standards for 1,1-Dichloroethylene and Lindane, or adequately explain the basis for the change.

10) 1200-4-3-.04(4) – Definition of *de minimis* (p. 18)

It is critical to ensure that the definition of *de minimis* discharges for the purpose of exemptions from antidegradation reviews is tightly limited to those discharges that are truly *de minimis* in nature, and is not allowed to expand on an individual or cumulative basis to allow significant degradation of Tennessee waters without the full antidegradation review required by federal law.

We believe that Tennessee should not adopt a de minimis exception at all and should conduct a proper Tier II antidegradation analysis for every permitting action allowing a new or increased loading of any pollutant. If, however, Tennessee does chose to apply the *de minimis* concept in permitting decisions for new or increased pollution, there are several concepts embedded in the Department's definition of *de minimis* that we feel have not been adequately explained in the regulations or the Responsiveness Survey. To ensure that the *de minimis* doctrine is used appropriately -- exempting only those discharges that would have a truly *de minimis* impact on water quality -- the Department should explain how it intends to implement the following provisions:

- In general, discharges other than domestic wastewater will be considered *de minimis* if they are "temporary" or use less than five percent of the available assimilative capacity. As noted in comment 2 above, it is not clear how the Department intends to calculate the assimilative capacity of a stream, especially for parameters that do not have numeric criteria. Furthermore, the Department does not explain what types of impacts it will consider to be "temporary."

  The Department should provide some guidance as to how it intends to implement these provisions so that the public and U.S. EPA can have some confidence that this exemption will not be unduly broad.

- The draft states that habitat alterations authorized by an Aquatic Resource Alteration Permit (ARAP) will be considered *de minimis* if the division finds that the impacts are "offset" by a combination of impact minimization and/or in-system mitigation. However, it is generally not appropriate to use offsets to allow an otherwise significant impact to escape antidegradation review. The Responsiveness Survey correctly notes that "out-of-system mitigation or the purchase of mitigation credits" do not render an activity *de minimis*. (Response to comment I-12) However, this response clearly implies that "in-system" offsets would be appropriate. We believe that it would generally be unacceptable under the federal antidegradation rules and existing case law to allow otherwise significant discharges to be classified and exempted as *de minimis*.

  Therefore, the Department needs to clarify how it will use this offset provision in practice in order to ensure that it is applied consistently with federal law.

- U.S. EPA and the relevant case law have recognized that a cumulative limit on individual *de minimis* discharges is necessary to ensure that the assimilative capacity of a water is not eroded significantly on a piecemeal basis in the absence of appropriate antidegradation review. It is in the nature of pollution problems generally that they frequently are the result of the effect of numerous different water pollution sources. Many of the waters now listed as impaired on the Tennessee 303(d) list of impaired waters are shown as being affected by numerous different types of pollution sources. (*see* Proposed Final Version Year 2006 303(d) List, pp.27, 28, 29, 38, 42, 111, 124 as a subset).

  However, the Tennessee rules provide that activities still may be considered *de minimis* even where total impacts use more than 10 percent of the assimilative capacity provided

that the division finds on a "scientific basis" that the additional degradation has an "insignificant effect on the resource." The Responsiveness Survey simply states that there "might be occasions in which a very small additional amount of degradation of the ten percent cap might be justified as *de minimis*. (Response to comment I-9) This is not a satisfactory explanation. As U.S. EPA has made clear, the assimilative capacity of a stream is a valuable natural resource in itself. Therefore, we believe it is inappropriate to exempt activities from antidegradation review that would consume a significant amount of assimilative capacity, even though the "effect on the resource" may not be immediately apparent.

Therefore, in order for U.S. EPA's review, the Department must provide additional detail and examples regarding the type of "scientific" basis and justification it will require and what it will consider to be an "insignificant effect" on the resource that could justify this major exemption from antidegradation review.

- The former revision stated that "Degradation will not be considered *de minimis* if a substantial loss (more than 50 percent) of assimilative capacity has already occurred." This statement has been deleted from the current draft. However, there is no explanation as to why the Department now apparently would consider it acceptable in some situations to exempt discharges from antidegradation review as *de minimis* even where there has been a "substantial loss" in assimilative capacity.

  The Department should return to its earlier draft to clarify that the substantial loss of assimilative capacity will not be considered *de minimis* under its rules.

- The Responsiveness Survey indicates that the rules need not explicitly provide for public review and appeal of the Department's basis for *de minimis* decisions because these rights are "already found in statute." (Response to comments I-15 and I-17). We consider these rights extremely important and worth stating separately in the antidegradation rules to lessen the chance of confusion. These rules should explicitly state the timing and procedural requirements for public notice, comment, and appeal. Furthermore, it is critical that the rules require the Department's basis for any *de minimis* decision, especially decisions allowing greater than 10% cumulative impact, to be carefully justified, recorded, and available to the public so that the public has a meaningful opportunity to review and comment on the decision.

  Therefore, we recommend the Department revisit this section and define the timing and procedural requirements for public notice, comment, and appeal.

11) 1200-4-3-.05(2) – Mixing zones (p. 20)

This paragraph contains discussion of how mixing zones and zones of initial dilution (ZID) will effect the interpretation of criteria under the Tennessee rules. However, it was pointed out in the comment period that Tennessee does not recognize mixing zones and generally considers the entire stream as providing instantaneous mixing (see comment J-1 and response). The response to comments states that "...permits are usually written to require instantaneous

mixing." However it appears that what is really meant is that permits "assume" instantaneous mixing (dilution) in setting limits, but that is usually not the case, nor is it required by the permit. If a mixing zone is to be allowed for a discharge, the state should set up a public process to establish such and follow the process where justified. As it is now written it appears as if all dischargers might claim they get an automatic mixing zone – essentially a variance form some water quality criteria – by definition.

Therefore, we suggest that the regulations more explicitly state that mixing zones only exist where specifically established through the permit process.

12) 1200-4-3-.05(8) – Method Detection Levels (p. 21)

There has been some confusion regarding the name of the table in 1200-4-3-.05(8). (See comment J-7 and response) In response to our comment, the Department changed the name of the table from "Required Detection Levels" to "Required Method Detection Levels." However, we believe that this further confuses the matter. Changing the heading to Method Detection Level conflicts with the use of this term in the EPA regulations (40 CFR 136) that establish the approved methods and a process to statistically determine levels of detection and quantitation (or quantification).

In June 2005 US EPA convened a "Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs" under the Federal Advisory Committee Act (FACA) to address this issue. One of our members sits as one of the 21 appointees of this panel. Though the FACA committee is not through yet, some definition have been at least preliminarily approved to try and clear up such confusion and guide national consistency. It is suggested that the Division examine available documents from the FACA (http://www.epa.gov/waterscience/methods/det/) and try to make changes that are consistent.

What may be intended in this table is a list of values at which testing must be able to report as an amount "at least as low as". This is probably better described as the Quantitation Level (L_Q in FACA terminology) – though unfortunately, not exactly. If the intent is to establish values for which a parameter can be detected as present, but not necessarily quantified with accuracy, that would be better described as Detection Level (L_D) or Critical Level (L_C), which may result in numbers that are different than those currently in the table.

Moreover, we believe that there are approved USEPA methods for detection of pollutants at substantially lower levels than those provided in the proposal. Specifically for Mercury, EPA approved methods now include Method 1631 that can detect the presence of Mercury down to 0.001 ug/L, as opposed to the value of 0.2 ug/L now in the table.

The Department should revisit these issues to assure that it is using consistent terminology and the lowest level for which there are approved USEPA methods.

13) 1200-4-3-.06(3) – Antidegradation protections for "available conditions" (p. 23)

As it is now written, the Tennessee Antidegradation Statement appears to provide protections equivalent to U.S. EPA's "Tier II" to "Exceptional Tennessee Waters" and some lower level of protection to waters characterized as having "available conditions" under 1200-4-3-.06(3). This is not consistent with federal law. At a minimum, the state must provide antidegradation protections equivalent to federal Tier II for all waters where the existing quality exceeds levels necessary to support fishable and swimmable uses. (40 CFR 131.12(a)(2)). By definition, this includes "available conditions" waters.

For example, the federal rules require a demonstration that allowing lower water quality is "necessary to accommodate important economic or social development in the area in which the waters are located." (40 CFR 131.12) This demonstration of "necessity" is required for Exceptional Tennessee Waters (see 1200-4-3-.06(4)(h) and (i)), but it is not explicitly required under the "available conditions" provisions at 1200-4-3-.06(3). Furthermore, the informational requirements and public participation provisions in 1200-4-3-.06(4)(j) and (k) appear to be limited to Exceptional Tennessee Waters. Finally, the Responsiveness Survey seems to indicate that a review of downstream impacts will only take place in Exceptional waters (see Response to comment C-28). The fact that the Department simply replaced the phrase "Tier II stream" with the phrase "Exceptional Tennessee Waters" in the latest rules revision is further evidence that the Department is not providing full "Tier II" protections to "available conditions" waters (see 1200-4-3-.06(4)(h) and (i)).

On the other hand, the Responsiveness Survey did reject a proposal to limit a "determination of social and economic need" to only Exceptional Tennessee Waters. (See response to comment K-3, explaining that "the state must make a determination that the change in water quality is in the public interest"). The Department's position on this point is correct, but it is in some tension with Section 1200-4-3-.06(3)'s failure to explicitly require a demonstration of necessity before allowing lower water quality.

In order to resolve the confusion caused by the differing formulations of antidegradation review used in Section .06(3) and .06(4)(h), the Department should amend the draft rules to explicitly make clear that the minimum requirements of the federal "Tier II" antidegradation protections apply in all waters where there are "available conditions." This level of protection must include a demonstration that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. Furthermore, the Department should clarify that the "information requirements" and "public participation" provisions in 1200-4-3-.06(4)(j) and (k) apply equally to all waters with "available conditions" and not only to Exceptional Tennessee Waters.

14) 1200-4-3.06(3) – Antidegradation decision rule (p. 23)

The Department must clarify the factors it will consider in reaching a decision that the lowering of water quality is "necessary" and how it intends to weigh those factors and reach a decision. The Responsiveness Survey indicates that this level of detail is "best placed into an SOP document rather than the regulation." (Response to comment K-6) While such a statement may be true, procedures must be developed and made available for review by the public and by EPA at the same time as the underlying policy. *See* 40 CFR § 131.12(a) (the State "shall adopt a

statewide antidegradation policy and identify the methods for implementing such policy") and § 131.6(d) (Minimum requirements for water quality standards submissions) (requiring submission to EPA of an antidegradation policy "consistent with Sec. 131.12"). Aside from being explicitly required by regulation, there is no way to undertake a meaningful review of the Tennessee antidegradation policy if the factors that the Department intends to use to make decisions under the policy are not available or have not yet been developed.

Therefore, the Department should clarify the factors it will consider in reaching a decision that the lowering of water quality is "necessary" and how it intends to weigh those factors and reach a decision.

15) 1200-4-3-.06(5) – Discharges to ONRWs

This section implies that new discharges to ONRWs may be allowed as long as they do not result in "measurable" degradation. (*See also* Response to comment C-15, noting the Department's position that "very small water quality changes can be authorized in ONRWs") However, this statement contradicts federal antidegradation rules. "Tier III protections" (40 CFR § 131.12(a)(3)) indicate that the water quality in ONRWs must be "maintained and protected." Any new pollution that is discharged into an ONRW degrades water quality – not just new pollution that can be "measured."

There is no indication that EPA intended the level of protection of ONRWs to vary according to the sensitivity of our sampling equipment. Therefore, the Department must clarify this section to be consistent with the federal rules and to make clear that no new pollution will be tolerated in Outstanding National Resource Waters.

16) 1200-4-3-.06(5) – Public nomination of protection levels

The Responsiveness Survey indicates that the Department "would be happy" to accept suggestions from the public regarding the appropriate level of protection for individual streams. (Response to comment C-18). However, the rules do not provide any procedures for making these kinds of nominations.

The Department should clarify and formalize the public's rights to have input into the level of protection for individual streams and set out the procedures for how public nominations will be considered.

Again, we appreciate the opportunity to continue this dialog with TDEC. If you have questions regarding these comments feel free to contact Barry Sulkin at 615-313-7066 or Albert Ettinger of the Environmental Law and Policy Center at 312-464-8787.

Regards,

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